

AMENDMENTS TO THE CLAIMS

1-20. (Canceled).

21. (New) A system for forward rate agreement futures contract trading, wherein a forward rate agreement futures contract comprises a convex futures contract related to a London Interbank Offered Rate (LIBOR), said system comprising:

an input device receiving or having access to:

1) a settlement price for each of a plurality of forward rate agreement futures contracts listed by an exchange,

2) expirations for each of the plurality of forward rate agreement futures contracts,

3) an identification of a seller of each of the plurality of forward rate agreement futures contracts,

4) an identification of a buyer of each of the plurality of forward rate agreement futures contracts,

5) a trade price for each of the plurality of forward rate agreement futures contracts, and

6) a base tick value representing a currency value for a minimum change in a contract price; and

a processor configured to:

1) calculate and save a present value factor using the settlement price of a forward rate agreement futures contract of the plurality of forward rate agreement futures contracts whose expiration is closest to the current date on which the present value factor is calculated, the processor calculating and saving a present

value factor for each of the remaining plurality of forward rate agreement futures contracts based on the previous present value factor calculation and the settlement price of the forward rate agreement futures contract whose expiration is next closest to the current date on which the present value factor is calculated,

2) determine an actual tick value for each of the plurality of forward rate agreement futures contracts based on the present value factor for the forward rate agreement futures contract and the base tick value,

3) generate a settlement amount for each of the plurality of forward rate agreement futures contracts using:

a) a number of contracts net bought or sold by an entity by the end of the previous day,

b) a number of contracts bought or sold by the entity by the end of the current day,

c) a price at which the entity bought or sold during the current day,

d) a settlement price for each contract for the previous day,

e) a settlement price for each contract for the current day, and

f) the actual tick value for the current day for each forward rate agreement futures contract,

the settlement amount representing, for each forward rate agreement futures contract, an amount paid by an entity that lost money to the exchange or paid by the exchange to an entity that made money on the current day, and

4) generate payment instructions for at least one of a buyer's bank and a seller's bank based on the settlement amount for each of the plurality of forward rate agreement futures contracts.

22. (New) The system of claim 21, further comprising an output device generating documentation of a funds transfer and confirmation of trade.

23. (New) The system of claim 21, wherein the present value factor (PVF) is

determined using
$$PVF = \frac{1}{[1 + R_0(D_0/360)] \times [1 + F_1(D_1/360)] \times \dots \times [1 + F_n(D_n/360)]},$$

wherein R_0 represents a spot LIBOR for a first futures contract expiration, D_0 represents a number of days from spot to the first futures contract expiration, D_n represents a number of days from spot to a last listed futures contract, F_1 represents a forward rate implied by the first futures contract, and F_n represents a forward rate implied by the last listed futures contract.

24. (New) The system of claim 21, wherein the actual tick value is determined by multiplying the base tick value by the present value factor.

25. (New) The system of claim 21, wherein the settlement amount for a futures contract buyer is determined using $B = (P_s - P_t) \times ATV \times 100$, wherein B represents a settlement amount due to or from a buyer for a futures contract, P_s represents the settlement price for the futures contract, P_t represents the trade price for the futures contract, and ATV represents the actual tick value for the futures contract, and wherein

the settlement amount for a futures contract seller is determined using $S = (P_t - P_s) \times ATV \times 100$, wherein S represents a settlement amount due to or from a seller for a futures contract, P_s represents the settlement price for the futures contract, P_t represents the trade price for the futures contract, and ATV represents the actual tick value for the futures contract.

26. (New) A method for convex futures contract trading, the convex futures contract price related to an interest rate, wherein a plurality of convex futures contracts are listed on an exchange and each of the plurality of convex futures contracts has a related settlement price, expiration, and trade price, said method comprising:

calculating and saving a first present value factor using the settlement price of a first convex futures contract of the plurality of convex futures contracts whose expiration is closest to the current date on which the first present value factor is calculated;

calculating and saving a present value factor for each of the remaining plurality of convex futures contracts based on the previous present value factor calculation and the settlement price of the convex futures contract whose expiration is next closest to the current date on which the present value factor is calculated;

determining an actual tick value for each of the plurality of convex futures contracts based on the present value factor for the convex futures contract and a base tick value representing a currency value for a minimum change in a contract price;

generating a settlement amount for each of the plurality of convex futures contracts using:

1) a number of contracts net bought or sold by an entity by the end of the previous day,

2) a number of contracts bought or sold by the entity by the end of the current day,

3) a price at which the entity bought or sold during the current day,

4) a settlement price for each contract for the previous day,

5) a settlement price for each contract for the current day, and

6) the actual tick value for the current day for each convex futures contract,

the settlement amount representing, for each convex futures contract, an amount paid by an entity that lost money to the exchange or paid by the exchange to an entity that made money on the current day; and

generating payment instructions for at least one of a buyer's bank and a seller's bank based on the settlement amount for each of the plurality of convex futures contracts.

27. (New) The method of claim 26, further comprising generating documentation of a funds transfer and confirmation of trade.

28. (New) The method of claim 26, wherein the present value factor (PVF) is determined using
$$PVF = \frac{1}{[1 + R_0(D_0/360)] \times [1 + F_1(D_1/360)] \times \dots \times [1 + F_n(D_n/360)]},$$

wherein R_0 represents a spot LIBOR for a first futures contract expiration, D_0 represents a number of days from spot to the first futures contract expiration, D_n represents a number

of days from spot to a last listed futures contract, F_1 represents a forward rate implied by the first futures contract, and F_n represents a forward rate implied by the last listed futures contract.

29. (New) The method of claim 26, wherein the actual tick value is determined by multiplying the base tick value by the present value factor.

30. (New) The method of claim 26, wherein the settlement amount for a futures contract buyer is determined using $B = (P_s - P_t) \times ATV \times 100$, wherein B represents a settlement amount due to or from a buyer for a futures contract, P_s represents the settlement price for the futures contract, P_t represents the trade price for the futures contract, and ATV represents the actual tick value for the futures contract, and wherein the settlement amount for a futures contract seller is determined using $S = (P_t - P_s) \times ATV \times 100$, wherein S represents a settlement amount due to or from a seller for a futures contract, P_s represents the settlement price for the futures contract, P_t represents the trade price for the futures contract, and ATV represents the actual tick value for the futures contract.

31. (New) The method of claim 26, further comprising:
generating a cumulative price quote for a group including a plurality of convex futures contract; and
displaying the cumulative price quote on the display device to convey information for use in trading the group.

32. (New) The method of claim 26, further comprising:
generating a price for a floor option on a convex futures contract; and
displaying the price for the floor option on the display device to convey
information for use in trading the floor option.

33. (New) The method of claim 32, wherein the step of generating a price
includes accounting for a limit, the limit from the group consisting of a cap, a floor, or
both, in generating the price.

34. (New) The method of claim 26, further comprising using data
representing a convex futures contract in computing a price for an Over-The-Counter
option.

35. (New) The method of claim 34, wherein the forming an interest rate swap
including the convex futures contract includes computing interest payments for the
interest rate swap.

36. (New) The method of claim 26, further comprising computing a zero
coupon libor curve in real time and applying the zero coupon libor curve to a portfolio of
interest rate derivatives to create forward rates, expected cash flows, and present value of
the cash flows for risk management manipulation of the portfolio.

37. (New) The method of claim 36, further comprising calculating an exposure indicia of movement in the curve.

38. (New) The method of claim 26, further comprising publishing daily quotes of the present value factors for each of the plurality of convex futures contracts to provide information for use in trading the convex futures contracts.

39. (New) The method of claim 26, further comprising conveying present value factor data to a plurality of vendor or broker computers on the exchange for use in trading one or more of the plurality of convex futures contracts.

40. (New) A method for clearing convex futures contracts traded on an exchange by one or more trading firms, a price of the convex futures contracts related to an interest rate, said method comprising:

 multiplying a trade price for a convex futures contract by a discount factor for an appropriate date to determine a settlement amount due by or to a trading firm, the discount factor modifying the trade price based on a base tick value adjusted by a representative closing price of last trading for the convex futures contract for the appropriate date;

 notifying the trading firm of a trade confirmation for the convex futures contract, the trade price for the convex futures contract, the discount factor for the convex futures contract, open positions for the convex futures contract, and the settlement amount due to or from the trading firm; and

triggering a computer-assisted transfer of funds to or from an account associated with the trading firm.